

Please Scan for the RECORD

Appl. No. 10/658,107
Amdt. Dated July 24, 2007
Reply to Office Action of April 25, 2007

Attorney Docket No. 81872.0053
Customer No.: 26021

REMARKS/ARGUMENTS:

Claims 1, 4, 6, 9, 10, and 17 are amended. New claim 20 is added. Support for new claim 20 can be found in original claim 1. Claims 1-20 are pending in the application. Reexamination and reconsideration of the application, as amended, are respectfully requested.

The present invention relates to an optical structural body having a structure which can be applied to a polarizer, a diffraction grading, a reflector, a filter, an optical attenuator or the like to be used in the field of optical communication and the like. (Applicant's specification, at p. 1, lines 9-14).

CLAIM REJECTIONS UNDER 35 U.S.C. § 102:

Claims 1-3, 7, 8, 11, 13, 14, and 17-19 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Hill et al. (U.S. Patent No. 5,367,588). The Applicant respectfully traverses this rejection. Claim 1, as amended, is as follows:

An optical structural body comprising: a laser light transmitting substrate; and a region having a periodic structure in which high refractive-index zones and low refractive-index zones are repeatedly being generated at a light condensing position of the substrate, wherein the light condensing position is defined by irradiating, to the substrate, a single condensed pulse laser light beam having an energy amount causing a photoinduced change in refractive-index to the substrate.

Applicant respectfully submits that Hill cannot anticipate or render claim 1 obvious, because Hill fails to teach or suggest "wherein the light condensing position is defined by irradiating, to the substrate, a single condensed pulse laser light beam

arguments
and
amendments
sufficient
to
overcome
art.
applied
7/31/07

having an energy amount causing a photoinduced change in refractive-index to the substrate."

Hill teaches a pulsed laser light that is irradiated onto the optical fiber 3, wherein the light is irradiated through the grating slit mask 1. The grating slit mask 1 includes grating striations 5. The irradiated and impinged light is diffracted by the grating striations 5 and split into three beams as shown in Fig. 1. The three beams then interfere mutually and a modulation 9 is formed in the optical fiber 3. (Hill, column 3, lines 35-47; Figure 1). The "grating slit mask 1" in Hill is therefore, different than the "substrate" of the present invention, since in the present invention it is a single condensed pulse laser light beam that is irradiated onto the substrate.

Applicant believes Hill merely teaches what according to the Applicant's specification, at p.4, lines 1-4, has been conventionally reported,

"As conventionally reported, there is known an example in which at least two pulse laser beams to be irradiated are used to form a periodic structure by interference of these pulse laser beams with each other."

In light of the foregoing, Applicant respectfully submits that Hill could not have anticipated or rendered obvious claim 1, because Hill fails to teach or suggest each and every claim limitation. Claims 2, 3, 7, and 8 depend from claim 1 and cannot be anticipated or rendered obvious for at least the same reasons as claim 1. Withdrawal of this rejection is thus respectfully requested.

Claims 11, 13, 14, and 17-19 similarly, require "irradiating, to a laser light transmitting substrate, a single condensed pulse laser light beam," and therefore, cannot be anticipated or rendered obvious for the same reasons discussed above. Withdrawal of this rejection is thus respectfully requested.

Claims 1-3, 5, 7, 8, 11, 14, and 17-19 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Ehbets et al. (U.S. Patent No. 6,545,808). Applicant respectfully traverses this rejection.

Applicant respectfully submits that Ehbets cannot anticipate or render claim 1 obvious, because Ehbets fails to teach or suggest "wherein the light condensing position is defined by irradiating, to the substrate, a single condensed pulse laser light beam having an energy amount causing a photoinduced change in refractive-index to the substrate."

Ehbets discloses a photoresist 27 applied on the film layer 21. The photoresist 27 is irradiated by light in holographic manner to form an interference pattern, and then dry etched to form a variable film layer 21. (Ehbets, column 10, line 65-column 11, line 15).

In Ehbets, a holographic light is required for making an interference pattern on the photoresist 27. Such holographic light is not a "single pulse laser light" as taught by the present invention. Thus, the limitation, to irradiate a single condensed pulse laser light beam onto the substrate, cannot be anticipated by or rendered obvious over Ehbets.

In light of the foregoing, Applicant respectfully submits that Ehbets could not have anticipated or rendered obvious claim 1, because Ehbets fails to teach or suggest each and every claim limitation. Claims 2, 3, 5, 7, and 8 depend from claim 1 and cannot be anticipated or rendered obvious for at least the same reasons as claim 1. Withdrawal of this rejection is thus respectfully requested.

Claims 11, 14, and 17-19 similarly, require "irradiating, to a laser light transmitting substrate, a single condensed pulse laser light beam," and therefore, cannot be anticipated or rendered obvious for the same reasons discussed above. Withdrawal of this rejection is thus respectfully requested.

Appl. No. 10/658,107
Amdt. Dated July 24, 2007
Reply to Office Action of April 25, 2007

Attorney Docket No. 81872.0053
Customer No.: 26021

ALLOWABLE SUBJECT MATTER:

The Office objected to claims 4, 6, 9, 10, 12, 15, and 16 as being dependent upon a rejected base claim but states that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In response, the Applicant rewrote claims 4, 6, 9, and 10 as independent claims keeping the limitations that the Office acknowledged were neither taught nor suggested by Hill or Ehbets. Claims 12, 15, and 16 depend from claim 11. Since claim 11 is believed to be patentable in its current form for the reasons discussed above, claims 12, 15, and 16 are similarly, believed to be patentable in their current forms. Withdrawal of this objection and allowance of claims 4, 6, 9, 10, 12, 15, and 16 is respectfully requested.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (310) 785-4600 to discuss the steps necessary for placing the application in condition for allowance.

Appl. No. 10/658,107
Amdt. Dated July 24, 2007
Reply to Office Action of April 25, 2007

Attorney Docket No. 81872.0053
Customer No.: 26021

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,
HOGAN & HARTSON L.L.P.

Date: July 24, 2007

By: 

Lawrence J. McClure
Registration No. 44,228
Attorney for Applicant(s)

1999 Avenue of the Stars, Suite 1400
Los Angeles, California 90067
Phone: 310-785-4600
Fax: 310-785-4601